

II. *On the Cossonidæ of Japan.*

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HAVING been requested by Mr. G. Lewis to draw up a paper on the various members of the *Cossonidæ* which he obtained during his late residence in Japan, and which form an important (though perhaps not very considerable) item of his Coleopterous gleanings, I have done so,—though not without some slight degree of regret at the large number of new genera which I have found it necessary to establish. I say “regret,” because where species are comparatively small in size, and present no modifications of structure which are at once striking and conspicuous, and where moreover external characters can alone be employed for the purposes of classification, one would far rather admit them into groups which are already recognized than propose additional ones for their reception. Yet, after a very careful examination of Mr. Lewis’s material, I feel convinced that the ordinary European types do not prevail in that particular portion of the Japanese empire to which his researches have been confined,—their places being manifestly taken by kindred, and to some extent representative, forms, which have geographically too much importance not to be acknowledged as distinct. What the case may be in the northern and central parts of the archipelago I have no means of ascertaining,—for, unless I am much mistaken, Mr. Lewis’s explorations were prosecuted chiefly in the island of Kushiu and the southern division of Nipon; but it is not improbable that the large island of Yesso, and the still larger and more northern one of Saghalien (which nevertheless is not, I believe, regarded as an integral portion of the Japanese empire), would have, to a considerable extent, faunas of their own. Be this however as it may, I would desire to state that it is to the *south* of Japan that the present memoir must be considered as more properly to pertain.

. Glancing at the 18 species described below (and which are embodied in 15 genera), there are a few points which strike one as requiring comment,—amongst which stands

pre-eminent the remarkable fact that they appear to be *all* of them undescribed,\* and that most probably, therefore, if they are not absolutely endemic, their areas of distribution are exceedingly limited in extent. This however is nothing more than what my own experiences in the Madeiran, Canarian, and Cape Verde archipelagos would have led me to anticipate, for in each of those groups their respective *Cossonidæ* are almost wholly peculiar; and the same is equally the case at St. Helena, and will perhaps be found to be so in most remotely-situated islands and archipelagos. But what surprises me more is that there does not appear to be any particular *type* (judging at least from the material to which I have had access) which, like *Microxylobius* at St. Helena and *Caulotrupsis* in Madeira, would seem as it were to reign supreme, and to be *par excellence* prolific in its modifications; for, on the contrary, by far the greater number of the species which I have examined appear to belong to genera which are unmistakably different from each other. Still, much allowance must doubtless be made for the limited size of the region which Mr. Lewis had the opportunity of investigating; and I would conjecture, therefore, that if any very numerous additions to the Cossonideous fauna of Japan are ultimately made they will probably pertain for the most part to the genera *Phlæophagosoma*, *Pseudocossonus*, and *Heterarthrus*, each of which have two representatives here enumerated, and the last of which appears to occur likewise in Ceylon.

One of the most salient facts is the discovery by Mr. Lewis of a new *Pentarthrum*, and also of two very distinct and well-marked genera (*Pentacoptus* and *Tychiodes*) in the small subfamily of which *Pentarthrum* is now recognized as the type, and in which the funiculus is composed of only five articulations. One of these genera, however, namely, *Tychiodes*, although communicated by Mr. Lewis, was in reality detected, I believe, by Dr. A. Adams,—who found several examples of it in the island of Awasima, near Sado, on the north-west coast of Nipon,

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\* The only one which I feel might possibly prove to be an exception to this statement is the first species on the list,—the *Tetratemnus sculpturatus*,—which seems to have a rather wider geographical range, and which may perhaps have been characterized as a *Dryophthorus*. Still I cannot satisfy myself that it will quadrate with the diagnosis of any described species; though it is certain that several closely allied forms have been published (I believe erroneously) as *Dryophthori*.

and consequently at a rather higher latitude than the area which was explored by Mr. Lewis. The *Pentarthrum* itself is peculiarly interesting, since the only two exponents of its group which had hitherto been brought to light are (respectively) from England and the island of Ascension; and I have remarked, in the proper place, on the affinity which it possesses, both in structure and habits, with those two species.

Amongst the *Cossonides* proper, *Pholidoforus* is unusually aberrant on account of the robust scales (so familiar, and ordinary, in certain other departments of the *Rhynchophora*) with which it is clothed; and *Xenomimetes* is noteworthy from representing, as it seems to me, in Japan, the genus *Eremotes* (or *Syntomocerus*) which infests the pine trees of the Canarian archipelago. *Sphærocorynes* introduces us to another *sub-Hylastideous* form (yet nevertheless strictly *Curculionideous*), of a very marked character; whilst *Stenoscelis*, which is still nearer to the *Hylastidæ* (being indeed the *nearest* to that family of all known *Rhynchophorous* types), has an interest, from a geographical point of view, emphatically its own, on account of the single exponent as yet described (the *S. hylastoides*, Woll., Journ. of Ent. i. 142, t. 11, f. 1) being a native of St. Helena and the Cape of Good Hope. Indeed *Stenoscelis*, *Pentarthrum* and *Hexarthrum* are the only genera, out of the 15 enumerated in this paper, which do *not* appear to be absolutely new.

In order to make the various forms, and their classification, intelligible, I have compiled, as a slight aid to the eye, the following tabular synopsis:—

SECTIO RHYNCHOPHORA.

Fam. *Cossonidæ*.

a. *Funiculus* 4-art.....Subfam. *Dryophthorides*.

Genus 1. (Corpus parallelo-fusiforme, opacum, grossissime sculpturatum, parce lutosum) .. *Tetratemnus*.

b. *Funiculus* 5-art.....Subfam. *Pentarthrides*.

Genus 2. (Corpus breviter parallelo-oblongum, opacum, grosse sculpturatum, parce lutosum). *Pentacoptus*.

Genus 3. (Corpus angustum, subcylindricum, subnitidum, calvum) .. .. . *Pentarthrum*.

Genus 4. (Corpus oblongo-ellipticum, latum, nitidiusculum, calvum; rostro gracillimo; prothorace transverso; metasterno breviusculo) . *Tychiodes*.

- c. *Funiculus* 7- (in *Hexarthro* 6-) art. . . . . Subfam. *Cossonides*.
- \* *Rostrum vel plus minus elongatum, vel breve.*
- † *Corpus opacum, plus minus squamosum, aut lutosum.*
- Genus 5. (*Corpus* dense squamosum, subfusiforme. Antennæ elongatæ, mox ante medium rostri insertæ. Oculi prominentes. Tarsi longiusculi, art.º 3<sup>to</sup> bilobo) . . . . *Pholidoforus*.
- Genus 6. (*Corpus* parce lutosum, subfusiforme. Antennæ breviusculæ, in medio rostri insertæ. Oculi demissi. Tarsi brevissimi, art.º 3<sup>to</sup> fere simplici) . . . . *Coprodema*.
- Genus 7. (*Corpus* parce lutosum, subparallelum. Antennæ mediocres, in medio rostri insertæ. Oculi subdemissi. Tarsi longiusculi, art.º 3<sup>to</sup> bilobo) . . . . *Erodema*.
- †† *Corpus plus minus nitidum, calvum.*
- x. *Corpus plus minus cylindricofusiforme; elytris apice integris.*
- Genus 8. (*Rostrum* elongatum, gracile. Antennæ plus minus graciles, capitulo abrupto. Pedes mediocres; tarsi mediocribus, art.º 3<sup>to</sup> fere simplici) . . . . *Phlæophagosoma*.
- Genus 9. (*Rostrum* crassius. Antennæ crassæ, capitulo angusto, minus abrupto. Pedes valde incrassati; tarsi brevissimis, crassis art.º 3<sup>to</sup> bilobo, ult.º brevissimo conico. *Corpus* antice et subtus omnino levius sculpturatum, . . . . *Pseudocossonus*.
- Genus 10. (*Rostrum* paulo brevius, crassiusculum, apice recte truncatum. Antennæ subgraciles, capitulo abrupto. Elytra sæpius pallidiora. Pedes longiusculi; tarsi elongatis, art.º 3<sup>to</sup> bilobo, ult.º secundum sexum diverso) . . *Heterarthrus*.
- Genus 11. (*Rostrum* breve, crassum. Antennæ subcrassæ, capitulo haud abrupto. Pedes breves, crassi; tarsi breviusculis, crassiusculis, art.º 3<sup>to</sup> vix bilobo) . . . . *Macrorhyncholus*.
- xx. *Corpus cylindricum; elytris apice ipso subdivaricatis.*
- Genus 12. (*Rostrum* multo brevius, oculis prominentibus. Antennæ breviusculæ, capitulo abrupto. Tibiæ subflexuosæ; tarsi elongatis, gracilibus, art.º 3<sup>to</sup> fere simplici) . . . . *Xenomimetes*.
- \*\* *Rostrum brevissimum, crassum (aut parallelum, aut triangulare).*
- Genus 13. (*Rostrum* subtriangulare, oculis demissis. Antennæ brevissimæ; scapo brevissimo; funiculo 6-articulato. Pedes anteriores ad basin fere contigui; tarsi gracilibus, longiusculis, art.º 3<sup>to</sup> simplici) . . . . *Hexarthrum*.

Genus 14. (Rostrum parallelum, oculis prominentibus.

Antennæ longiusculæ, crassæ, capitulo magno. Pedes ad basin subæqualiter distantes; tarsis robustis, art.º 3<sup>to</sup> bilobo) .. *Sphærocorynes*.

Genus 15. (Rostrum triangulare, oculis demissis. An-

tennæ brevissimæ, graciles. Pedes antici ad basin contigui; tarsis gracillimis, longissimis, art.º 3<sup>to</sup> fere simplici. Metasternum paulo minus elongatum) .. .. *Stenoscelis*.

a. *Funiculus* 4-art. . . . (Subfam. DRYOPHTHORIDES).

Genus 1. TETRATEMNUS (nov. gen.).

*Corpus* parallelo-subfusiforme, *Calandræ* formam simulans, valde profunde et grossissime sculpturatum, hinc inde parce subsquamoso-lutosum: *rostro* brevi, crasso, lineari; *scrobe* profundâ, usque ad oculum currente; *oculis* sat magnis, obliquis, transversis (sed infra nullo modo etiam subcontiguis), omnino demissis, longe ante marginem prothoracis sitis: *prothorace* ovato, antice et postice truncato: *scutello* minutissimo, punctiformi, vix observando: *metasterno* elongato: *elytris* antice subparallelis, postice ad utrumque latus (a medio usque ad apicem) oblique sectis, margine ipso versus apicem acute cariniformi. *Antennæ* breves, crassæ, pone medium rostri insertæ; *scapo* curvato, gradatim clavato; *funiculo* 4-articulato, art.º 1<sup>mo</sup> reliquis majore, sequentibus longitudine subæqualibus, latitudine crescentibus, 2<sup>do</sup> obtriangulari, 3<sup>to</sup> 4<sup>to</sup>que transversis, hoc ad *capitulum* (magnum, ovalem, corneum, solidum, apice solum spongiosum pubescentem) arcte adpresso. *Pedes* breves, validi, *anteriores* ad basin parum distantes, *postici* magis, sed haud valde (ut in *Dryophthoro*) separati: *femoribus* muticis: *tibiis* ad apicem externum in unicum robustum productis: *tarsis* brevissimis, filiformibus, distincte 5-articulatis, art.<sup>is</sup> 1<sup>mo</sup>, 2<sup>do</sup> 3<sup>to</sup>que subæqualibus (3<sup>to</sup> simplici, nec dilatato, nec bilobo), 4<sup>to</sup> minore sed valde conspicuo, ult.<sup>mo</sup> *unguiculis* parvis armato.

*Obs.*—Genus *Dryophthoro* (teste generis typo—sc. *D. lymexylone*, europæo) affinitate proximum, et illo entomologicis adhuc confusum; sed certe distinctum, nisi fallor. A *Dryophthoro* differt rostro pedibusque (præcipue tarsis) brevioribus, necnon coxis anticis inter se parum distantibus (nec subcontiguis), sed tamen coxis posticis conspicue minus quam in *Dryophthoro* separatis.

*Dryophthoro* aliter discedit elytris angustioribus, magis parallelis, lateraliter compressis, utrinque ad apicem multo magis cariniformibus, uncoque tibiali minus elongato.

Α τετρα, quatuor, et τέμνω, scindo.

There can be no doubt that the weevil from which the above characters have been drawn out, if not already described as a *Dryophthorus*, is congeneric with several which have been referred to that group. Yet a careful comparison of it with the European *D. lymexylon* (which is stated expressly to be the *type*, and for examples of which, from Finland, I am indebted to Mr. E. W. Janson) is abundantly sufficient to shew that it cannot in reality be admitted into the same actual genus with that insect,—its shorter rostrum and legs, and (above all) the fact of its anterior coxæ being comparatively wide apart from each other (instead of nearly contiguous), whilst the posterior pair, on the other hand, are not *so* distantly separated as is the case in *Dryophthorus* proper, being differences of the utmost importance in this particular department of the *Rhynchophora*. As regards its less essential details, I may observe that its elytra are narrower and more parallel (or laterally-compressed) than in *Dryophthorus*, and have their keeled apical margin very much more prominent and developed; and that its antennæ are implanted a little further behind the middle of the rostrum, whilst its tibial hook and feet are considerably more abbreviated.

In other respects (and which it retains in common with *Dryophthorus*), I will merely mention that its 4-jointed funiculus and transverse eyes, and the fact of its abbreviated feet being distinctly *pentamerous* (the fourth articulation, although smaller than the preceding ones, being quite conspicuous and exposed—an almost unique feature, if not indeed entirely so, in the *Rhynchophora*), will combine to separate it from every other *Cossonideous* form with which we are here concerned.\*

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\* In its shorter rostrum, antennæ, legs, and feet, as well as in the proportions of its funiculus-joints, *Tetratemnus* would appear (judging at least from the published diagnosis) to agree better with the genus *Chærorhinus*, Fairm., from the south of Europe, than with *Dryophthorus*; but from that group its eyes and tarsi will (apart from all other differences) at once separate it,—the former being transverse and depressed, instead of rounded and prominent, whilst the latter are filiform and conspicuously 5-articulate; whereas the feet in *Chærorhinus* are said to be (*vide* Fairmaire, in the French *Annales* for 1857, p. 742, and also Lacordaire, *Gen. vii.* 323) on the ordinary pseudotetramerous type, with their third joint

1. *Tetratemnus sculpturatus*, n. sp.

*T.* parallelo-subfusiformis, niger, opacus, squamis cinereo-fuscis lutosus plus minus obtectus; capite rostroque (præsertim in fronte foveolatâ) valde inæqualibus, grosse punctato-rugosis; prothorace ovato, antice et postice truncato, mox pone apicem profunde transversim constricto, foveam latam mediam fere efficiente, profunde, dense et grosse punctato; elytris valde profunde punctato-sulcatis, interstitiis alte costato-elevatis; antennis pedibusque brevibus, crassis, rufescentioribus. Subtus (capite excepto) grosse sed parce punctatus.

Long. corp. lin.  $1\frac{1}{2}$ — $1\frac{3}{4}$ .

*Captus* inter pinos fungosque ad Hiogo, in ins. Nipon; necnon prope Nagasaki, in ins. Kushiu.

Its dark hue, in conjunction with its opaque and very deeply and coarsely sculptured surface, which is more or less sparingly besmeared with a kind of *mud*-like scaly deposit, and which tends to fill up the various inequalities and punctures, will serve additionally to distinguish the present insect; though it is true that these particular characters exist likewise, to an almost equal extent, both in *Pentucoptus* and *Coprodema*. Nevertheless the *structural* details which I have given above (*par excellence* of funiculus, eyes, elytra, and feet) will suffice at once to separate the *T. sculpturatus* from the members of those two genera.

Judging from the comparatively large number of individuals now before me, and which Mr. Lewis would appear to have taken principally at Hiogo, in the island of Nipon, ("in old fungus-covered pines bordering a water-course"), I think it is very likely that the present *Tetratemnus* is (if not common) at least widely spread; for it is remarkable that I had already an example of it in my collection which I captured a few years ago (dead) out of a cup of tea, while in the island of Jersey,—a fact which would perhaps indicate that the species occurs equally in China, and that the example alluded to was accidentally imported (much after the fashion which we are accustomed

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dilated and bilobed. By-the-by, it is much to be regretted that the generality of the continental Coleopterists still persist in characterising the tarsi of the *Rhynchophora* as *tetramerous* (which it is perfectly well known that they are *not*), and that too while the more correct term "pseudotetramerous" (proposed by Westwood upwards of thirty years ago,—*vide* Introd. p. 44) so exactly expresses their real structure.

to observe in such forms as *Silvanus* and *Calandra*,—to the latter of which indeed it bears at first sight a considerable resemblance).\*

b. *Funiculus* 5-art. . . . (Subfam. PENTARTHRIDES.)

Genus 2. PENTACOPTUS (nov. gen.).

*Corpus* parvum, breviter parallelo-oblongum, opacum, grosse sculpturatum, hinc inde parce subsquamoso-luto-sum: *rostro* brevi (sed lineari), lato, depresso; *oculis* parvis, rotundatis, valde prominentibus; *scrobe* brevi, profundâ, mox infra oculus desinente et ibidem terminatâ: *prothorace* elongato-subquadrato, *elytris* sensim angustiore: *scutello* minutissimo, punctiformi: *metasterno* elongato. *Antennæ* brevissimæ, in medio rostri insertæ; *scapo* brevi, clavato; *funiculo* 5-articulato, art.° 1<sup>mo</sup> reliquis majore crassiore, sequentibus brevibus, latitudine vix crescentibus; *capitulo* parvo, solido, ad apicem obscure annulato et ibidem subspongioso subpiloso. *Pedes* breves, validi, crassi, *antici* ad basin fere approximati, *intermedii* paulo distantiores, *postici* valde distantes: *femoribus* muticis: *tibiis* brevibus, robustis, ad apicem externum in uncum magnum productis: *tarsis* brevibus, crassiusculis, art.° 3<sup>tio</sup> paulo dilatato et bilobo, ult.<sup>mo</sup> longiore (sed brevi), *unguiculis* minutissimis armato.

Α πέντε, quinque, et κοπτός, sectus.

At first sight the opaque and coarsely sculptured little weevil for the reception of which the above genus is proposed has much the outline and aspect of a small *Gronops*; though of course, when closely inspected, every one of its characters (more especially as regards its rostrum, antennæ, and tibial hooks, and the soldered first and second segments of its abdomen) will instantly remove it from the entire section of the *Byrsopsides*. Yet, despite its peculiarities of outline and sculpture, and the mud-like scales (so unusual in the present sub-family) with which its surface is partially clothed, there can be no doubt that its 5-jointed funiculus will assign it a place amongst the

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\* Judging from the published diagnoses, this insect appears to be distinct both from the *Dryophthorus bituberculatus*, Fab. (which seems to occur in New Zealand, various islands of the Pacific, California, &c.), as well as from the *excavatus*, Dej. (which is registered as a Madagascar species).

*Pentarthrides* of the *Cossonidæ*; whilst its fully developed eyes, and medially inserted antennæ, in conjunction with its just appreciable scutellum and elongate metasternum, will tend still further to retain it in the immediate vicinity of *Pentarthrum* proper.

## 2. *Pentacoptus gronopiformis*, n. sp.

*P.* breviter parallelo-oblongus, piceo-niger, opacus, squamis fusco-cinereis lutosus plus minus obtectus; capite prothoraceque profunde et dense punctatis, rostro (brevis, parallelo, latiusculo, depresso) grosse longitudinaliter strigoso, oculis parvis sed valde prominentibus, hoc elongato-subquadrato, mox pone apicem profunde transversim constricto; elytris parallelis, prothorace latioribus, grosse et confertim punctato-sulcatis, interstitiis alte costato-elevatis; antennis pedibusque (præsertim illis) brevibus, rufescentioribus, illarum capitulo parvo. Subtus profunde et grosse punctatus.

Long. corp. lin.  $1\frac{1}{2}$ .

Captus in trunco quodam antiquo *Camellie japonicæ* ad Nagasaki, in ins. Kushiu, mense Augusto, A.D. 1865.

Apart from the features (some of them generic ones) above alluded to, the excessive shortness of the limbs of this coarsely sculptured and somewhat *Gronops*-shaped little Cossonid, added to the fact that its elongate-squarish prothorax (which is deeply constricted just behind the front margin) is appreciably narrower than the elytra, whilst its longitudinally strigulose rostrum is short and broad, but nevertheless linear and comparatively depressed, will all combine to give it a character which, when once seen, it is impossible to mistake. It appears to have been taken by Mr. Lewis at Nagasaki, in the island of Kushiu, —“out of an old *Camellia* tree in the garden of the British Consulate.”

## Genus 3. PENTARTHURUM.

Wollaston, Ann. Nat. Hist. xiv. 129 (1854).

*Corpus* lineari-cylindricum, angustum, sculpturatum, calvum: rostro lineari, vel (ut in *P. angustissimo*) subgracili, vel crassiore; oculis rotundatis, prominentibus; scrobe brevi, leviter decurvâ, infra oculum vix currente; prothorace vel (ut in specie nostrâ) ovali, vel (ut in *P. Huttoni*) ovato, vel (ut in *P. cylindrico*) ovato-cylindrico,

antice et postice truncato, mox pone apicem transversim constricto: *scutello* subrotundato, parvo sed conspicuo: *metasterno* valde elongato: *elytris* parallelis. *Antennæ* breviusculæ, in medio (aut potius mox ante medium) rostri insertæ; *scapo* robusto, gradatim clavato; *funiculo* 5-articulato, art.<sup>o</sup> 1<sup>mo</sup> reliquis paulo majore, sequentibus brevibus subæqualibus (tamen in *P. Huttoni*, britannico, 2<sup>do</sup> sensim paulo elongato); *capitulo* parvo, ovali. *Pedes* subrobusti, *antici* ad basin parum, *intermedii* paulo magis, et *postici* remote inter se distantes: *femoribus* muticis: *tibiis* ad apicem externum in uncum productis: *tarsis* art.<sup>is</sup> 1<sup>mo</sup>, 2<sup>do</sup> 3<sup>tio</sup>que longitudine subæqualibus, 3<sup>tio</sup> vel (ut in specie nostrâ atque in *P. Huttoni*) sensim latiore et paululum bilobo, vel (ut in *P. cylindrico*) fere simplici, ult.<sup>mo</sup> clavato *unguiculis* parvis armato.

Although *Pentarthrum* is not a new genus (it having been established by myself in 1854), I have nevertheless given a full diagnosis of it in order to point out the exact particulars in which it differs from the other groups of the *Cossonidæ* with which we are here concerned; and it will perhaps be sufficient therefore to remark that the comparatively narrow, parallel, and elongate bodies of the few species which have as yet been ascertained to compose it, in conjunction with their but very slightly shining, piceous and rather closely sculptured surfaces (which are entirely free from both scales and pubescence), their almost medially inserted antennæ, their 5-jointed funiculi, and their linear but somewhat robust rostra, will suffice to distinguish it from its immediate allies.

### 3. *Pentarthrum angustissimum*, n. sp.

*P.* lineare, angustissimum, depressiusculum, subnitidum, clare piceum; rostro lineari, punctulato, oculis rotundatis, promiulis; prothorace ovali, antice posticeque truncato, mox pone apicem profunde transversim constricto, paulo grossius punctato, postice in medio late sed leviter depresso; *elytris* prothorace paulo angustioribus, parallelis, profunde et confertim sulcato-punctatis, interstitiis sensim elevatis; antennis pedibusque breviusculis, rufescentioribus, illarum capitulo parvo, ferrugineo. Subtus profunde et argute punctatum.

Long. corp. lin.  $1\frac{1}{2}$ — $1\frac{1}{3}$ .

*Captum* prope Nagasaki, in ins. Kushiû, circa domos. Junio haud infreqvens.

The structural characters of this narrow and linear little Cossonid shew it to be a true *Pentarthrum*,—its 5-jointed funiculus, medially-inserted antennæ, and its developed eyes and scutellum, added to its colour, outline, and sculpture, being in entire accordance with the two hitherto described members of that group. I say “two,” because a more careful examination of the unique weevil from St. Helena, which I enunciated nearly three years ago under the title of *Pentarthrum subcæcum*,\* has recently convinced me that it is the type of a new genus allied to *Mesoxenus* (well characterized not only by its obsolete eyes and scutellum and its more apically-implanted antennæ, but likewise by its convex, largely-developed prothorax and general aspect and sculpture), and not an “aberrant *Pentarthrum*.” So that, up to the present date, only two veritable *Pentarthra* had been brought to light,—namely, the English *P. Huttoni* (for the reception of which, in 1854, I originally proposed the genus), and the *P. cylindricum*, which was detected by the late Mr. Bewicke in the island of Ascension; and I need scarcely add therefore that a third representative, from Japan, and one so remarkably well defined, is a fact of considerable importance geographically. As elsewhere stated, however, there is a peculiarity about the *modus vivendi* of the *Pentarthra* which renders it highly probable that the group will be found eventually to have a very wide range,—their habits being, apparently, to follow in the wake of civilization by attaching themselves to old planks, boards, rafters, casks, &c., on the rotten (and often tinder-like) wood of which they more especially subsist. Thus the English *P. Huttoni* was obtained originally amongst logs of wood which had been long laid up in an out-house, and it was subsequently met with in a decayed cask near Plymouth, and by myself in portions of an ancient plank adjoining my house and conservatory at Teignmouth; and, in like manner, the *P. cylindricum*, at Ascension, was captured abundantly by Mr. Bewicke in the broken-up wood of a worn-out box in which plants had been cultivated. It is consequently quite in accordance with what I may perhaps be permitted to call their generic mode of life that the present *Pentarthrum* should have been discovered by Mr. Lewis, in Japan, “by beating the straw roofing of old cottages near Nagasaki;” and I may further remark that I believe him to be perfectly correct when he

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\* Vide Ann. Nat. Hist. (1869).

conjectures that "in all probability it really lived in the rafters."

The *P. angustissimum* is more nearly allied to the *P. cylindricum* from Ascension than to the English *P. Huttoni*, but it is relatively very much narrower than either, its rostrum is a little longer, and its prothorax is more constricted behind the front margin, and more depressed (as in *Mesites*) down its posterior disc. Its elytra also are more closely sculptured, and have their interstices more raised. In its short antennæ and small club it is more in accordance with the Ascension species than with the English one.

#### Genus 4. TYCHIODES (nov. gen.).

*Corpus* oblongo-ellipticum, latum, depressum, sculpturatum, calvum: *capite* parvo; *rostro* elongato, gracillimo, lineari, tereti; *oculis* sat magnis, rotundatis, paulo prominulis; *scrobe* subrectâ, vix ad oculum currente: *prothorace* brevi, rotundato-ovato, antice et præsertim postice valde truncato: *scutello* subrotundato, valde conspicuo; *metasterno* longiusculo (vix elongato): *elytris* oblongo-ellipticis, basi late truncatis. *Antennæ* longiusculi, subgraciles, mox pone medium rostri insertæ; *scapo* flexuoso, clavato; *funiculo* 5-articulato, art.<sup>o</sup> 1<sup>mo</sup> sat magno rotundato-obovato, sequentibus inter se laxis, subperfoliatis, 2<sup>do</sup> elongato, obconico, 3<sup>tio</sup>, 4<sup>to</sup> 5<sup>to</sup>que longitudine subæqualibus, latitudine crescentibus, 5<sup>to</sup> ad *capitulum* magnum ovalem abruptum distincte annulatum haud adpresso. *Pedes* crassi, *antici* ad basin parum, *intermedii* paulo magis, et *postici* remote inter se distantes: *femoribus* muticis, et (præsertim anticis) crassis: *tibiis* ad apicem externum in uncum brevem productis: *tarsis* elongatis, art.<sup>is</sup> 1<sup>mo</sup>, 2<sup>do</sup> 3<sup>tio</sup>que longitudine subæqualibus (1<sup>mo</sup> paululum longiore), 3<sup>tio</sup> reliquis multo latiore et distincte profundeque bilobo, ult.<sup>mo</sup> elongato clavato, *unguiculis* sat magnis armato.

*Obs.*—Genus inter *Cossonidas* valde anomalum, distinctum; conspicuum est rostro elongato gracillimo lineari tereti, pedibus crassis, tarsorum elongatorum articulo tertio lato necnon conspiciende profundeque bilobo, metasterno minus elongato (sed vix brevissimo ut in gen. *Microxylobio*), abdominis segmento primo breviusculo, corpore oblongo-elliptico latiusculo depresso (prothoraceque lato, brevi, transverso), etiam *Tychii* formam fere simulante. Aliter exstat capite parvo, scutello valde distincto, antennis longi-

usculis subgracilibus (funiculi 5-articulati articulo secundo elongato) et mox pone medium rostri insertis, necnon pedibus (præsertim anticis) incrassatis.

A *Tychius* et εἶδος, aspectus.

The very anomalous little Cossonid (several examples of which were taken by Dr. Adams in the island of Awaisima, near Sado, off the north-west coast of Nipon) from which I have compiled the above generic diagnosis is one of the most remarkable members of the family which has hitherto been brought to light, and one which is especially important as adding another and most well-defined form to that particular section which is characterized by *Pentarthrum*, *Pentacoptus*, the Atlantic *Pentatemnus* and *Mesoxenus*, the south-European *Amaurorhinus* (if indeed it be truly distinct from *Mesoxenus*), and the St. Helena *Microxylobius*,—in all of which the funiculus is composed of only five joints. *Primâ facie* indeed its aspect is so remarkable (from its rather depressed, wide, oblong-elliptic body, short, transverse prothorax, and extremely slender, linear rostrum) as to be slightly suggestive of a large *Tychius* and other members of the *Erirhinidæ*; nevertheless the structure of its abdomen, tibiæ, and other details, show it to be an unmistakable Cossonid. In other respects it is conspicuous for the smallness of its head, and for its antennæ (which are rather long and slender) being implanted a trifle behind the middle of its very narrow rostrum, with their scape flexuose, and their funiculus-articulations (the second of which is comparatively elongate and subconical) somewhat loosely connected together. Its metasternum and the basal segment of its abdomen are both of them rather shorter than is the case in the ordinary members of this family (though the former is not *so* abbreviated as in the *Microxylobii* of St. Helena); its scutellum is very apparent; its legs are a good deal thickened, especially the anterior pair; and its feet are considerably developed, with their third joint widened and deeply bilobed.

#### 4. *Tychiodes Adamsii*, n. sp.

T. oblongo-ellipticus, latus, depressus, nitidus, brunneo-piceus; capite parvo, rostro lineari, angustissimo, nitidissimo, fere impunctato, fronte foveolatâ et punctulis paucis adpersâ; prothorace brevi, transverso, rotundato-

ovato, antice et præsertim postice valde truncato, distinctius sed haud dense punctato, postice in medio foveâ rotundatâ leviter impresso; elytris oblongo-ellipticis, basi late truncatis, sat profunde punctato-striatis, interstitiis latis, convexiusculis et parcissime minutissimeque (sub lente) punctulatis; antennis clarioribus, capitulo magno pallidiore. Subtus paulo levius, et subremote punctatus, necnon minutissime pubescens.

Long. corp. lin.  $1\frac{1}{2}$ —2.

*Captus* in ins. Awasima, juxta ins. Nipon, a Dom. A. Adams, M.D., cujus in honorem nomen triviale proposui.

Apart from the features already pointed out, and which are principally structural ones, the present peculiar and somewhat *Tychius*-like Cossonid may be known by its rather shining and brownish-piceous surface,—the prothorax of which is sharply, but not very deeply or closely, punctulated, whilst the punctures of its deep and wide elytral striæ are distinct and large. I have much pleasure in dedicating it to its discoverer, Dr. A. Adams,—through whose kindness I have received several examples, for inspection, which have been transmitted to me by Mr. G. Lewis.

c. *Funiculus* 7-art. . . . (Subfam. COSSONIDES.)

\* *Rostrum vel plus minus elongatum, vel breve.*

Genus 5. PHOLIDOFORUS (nov. gen.).

*Corpus* angustulum, fusiformi-elongatum (sc. in medio parallelum, antice et postice attenuatum), sculpturatum, squamosum: *rostro* longiusculo, angustulo, subtereti; *scrobe* profundâ, curvatâ, longe infra oculum desiliente; *oculis* parvis, rotundatis, prominentibus, longe ante marginem prothoracis sitis: *prothorace* elongato-ovato, antice et postice truncato: *scutello* subrotundato, distincto: *metasterno* elongato: *elytris* antice parallelis, postice acutiuscule productis. *Antennæ* elongatæ, graciles, mox ante medium rostri insertæ; *scapo* recto, leviter clavato; *funiculo* 7-articulato, art.° 1<sup>mo</sup> subquadrato-obconico (reliquis majore, sed vix magno), sequentibus longitudine subæqualibus, latitudine paulo crescentibus; *capitulo* sat magno, ovali, distincte annulato. *Pedes* elongati, *antici* ad basin parum approximati, *intermedii* paulo distantiores, *postici* valde distantes:

*femoribus* muticis: *tibiis* ad apicem in uncum inflexum, necnon ad internum in spinulam parvam productis: *tarsis* longiusculis, art.<sup>o</sup> 1<sup>mo</sup> secundo sensim longiore, 3<sup>tio</sup> latiusculo et evidenter bilobo, ult.<sup>mo</sup> elongato clavato, *unguiculis* sat magnis armato.

*Obs.*—Genus inter *Cossonidas* corpore dense squamoso insignum. Aliter conspicuum est formâ subangustâ, in medio parallelâ, antice et postice attenuatâ, antennis longiusculis, gracilibus, mox ante medium rostri insertis, oculis parvis sed prominentibus, funiculi articulo secundo tertio viz longiore, tarsorumque articulo tertio præcedentibus evidenter latiore atque bilobo.

A φολις, squama, et φέγω, fero.

In its densely *scaly* surface the present insect affords a curious exception to what is usual amongst the *Cossonidæ*; for although it is true that *Tetratemnus*, *Pentacoptus*, *Coprodema* and *Exodema* are likewise remarkable for the few *mud*-like scales with which they would seem to be more or less partially incrustated, in *Pholidoforus* the body is regularly and somewhat closely beset with short, thick, fulvo-cinereous scaliform setæ,—a portion of which are slightly erected, and the others altogether decumbent. Yet the structure of its abdomen, tibiæ, eyes, rostrum, and 7-jointed funiculus show it to be an unmistakeable member of this subfamily. In other respects it may be known by its narrowish and fusiform outline (it being parallel in the middle, but acute both before and behind), by its rather long and slender antennæ being inserted just before the middle of its appreciably curved rostrum, by its eyes being small and rounded but very prominent, by its funiculus having the second joint scarcely at all longer than the third, and by its feet being a good deal developed and lengthened,—their third articulation being rather broad (for the *Cossonidæ*) and bilobed.

5. *Pholidoforus squamosus*, n. sp.

*P. angustulus*, elongato-subfusiformis (antice posticeque acutus), brunneo-niger, opacus, squamisque fusco-cinereis (suberectis et demissis, necnon interdum fulvescenti-tinctis) plus minus dense tectus; capite prothoraceque (subter squamis) profunde et rugose punctatis, rostro longiusculo, subarcuato, oculis parvis, rotundatis, prominentibus; elytris antice parallelis, postice acutis, (subter squamis) profunde, confertim et grosse sulcato-punctatis, interstitiis seriatim

squamosis; antennis elongatis, picco-ferrugineis, capitulo sat magno, pallidiore. Subtus profunde et grosse punctatus.

Long. corp. lin. circa  $1\frac{2}{3}$ .

*Captus* prope Nagasaki, in ins. Kushiu.

Not to mention the many features to which I have above alluded, the present fusiform (or somewhat anteriorly and posteriorly acute) Cossonid may be known from the other species described in this paper by the dirty, yellowish-brown hue of the short setæ and mud-like scales with which its opaque and coarsely-sculptured surface is rather densely clothed. There are eleven examples of it amongst the Coleoptera which were collected by Mr. Lewis in Japan, which (judging from an appended label) appear to have been beaten out of "old hedges" near Nagasaki in the island of Kushiu.

#### Genus 6. COPRODEMA (nov. gen.).

*Corpus* subfusiforme (in medio subparallelum, antice et postice leviter attenuatum), profunde sculpturatum, hinc inde parce subsquamoso-lutosum; *rostro* longiusculo, angustulo, subtereti; *scrobe* curvatâ, infra oculum desiliente; *oculis* subrotundatis, demissis, longe ante marginem prothoracis sitis: *prothorace* ovato, antice et postice truncato: *scutello* rotundato, distincto: *metasterno* elongato: *elytris* antice subparallelis, postice acutiusculis sed ad apicem ipsum truncatis. *Antennæ* in medio rostri insertæ; *scapo* breviusculo, clavato; *funiculo* 7-articulato, art.<sup>o</sup> 1<sup>mo</sup> reliquis paulo majore, sequentibus longitudine subæqualibus, latitudine paulo crescentibus; *capitulo* sat magno, ovali, distincte annulato. *Pedes* breviusculi, validi, *antici* ad basin fere approximati, *intermedii* paulo distantiores, *postici* valde distantes: *femoribus* muticis: *tibiis* ad apicem externum in uncum magnum valde inflexum, necnon ad internum in spinulam minutam productis: *tarsis* brevibus, filiformibus, art.<sup>is</sup> 1<sup>mo</sup>, 2<sup>do</sup> 3<sup>io</sup>que latitudine longitudineque subæqualibus (3<sup>io</sup> fere simplici, i. e. præcedentibus vix latiore et vix bilobo), ult.<sup>mo</sup> vix clavato, *unguiculis* parvis armato.

*Obs.*—Genus staturâ sculpturâque etiam *Calandram* primâ facie simulans, et aliquo modo *Pholidoforo* congruens; sed ab hoc distinguitur corpore grossius sculpturato, antice et postice minus acuto, et multo minus squamoso (squamis quasi luteis solum, nec setiformibus, parciusque adspersis), necnon elytris ad apicem sensim

truncatis, antennis pedibusque brevioribus,—illis in medio (nec ante medium) rostri insertis, et his paulo valioribus, unco tibiali longiore robustiore ac magis curvato, tarsisque multo brevioribus ac fere simplicibus (articulo tertio præcedentibus vix majore et vix bilobo).

A κόπρος, lutum, et δέμας, corpus.

The *primâ facie* aspect and outline of the opaque and deeply sculptured little weevil for which I have been compelled to establish the present genus is a good deal suggestive of *Calandra*; but its 7-jointed funiculus, medially-inserted antennæ, widely separated eyes, and short, filiform feet, apart from the other details of its structure, show it to be an undoubted Cossonid. Indeed, in the tendency of its surface to become unequally incrustated with mud-like scales (or which, perhaps, has more the appearance of a kind of scaly *deposit*) it approaches *Pholidoforus*; but in that genus the clothing is not only very much denser and more regular, but the scales are of an ordinary character, many of them being suberect (though short) and setiform. In other respects *Coprodema* differs from *Pholidoforus* in being rather smaller, and less acute both before and behind, and more coarsely and conspicuously sculptured, in having its elytra appreciably truncated at their hinder apex (though perhaps not sufficiently so to expose any decided portion of the pygidium), and in its limbs being very considerably shorter,—the antennæ, moreover, being implanted in the middle of the rostrum (instead of somewhat before it), whilst its tibial hook is more largely developed and its feet *very much less so* (the third joint being small and almost simple, and the terminal one *comparatively* abbreviated and but little clavate, with the claws smaller).

#### 6. *Coprodema calandræformis*, n. sp.

C. subfusiformis, nigra, opaca, parce inæqualiter subcinereo-squamoso-lutosa; capite prothoraceque profunde, rugose et confertim punctatis (punctis in hoc grossis), rostro versus apicem rufescentiore et ibidem vix sculpturato, oculis omnino demissis; prothorace mox pone apicem transversim constricto; elytris profunde, confertim et grosse punctato-sulcatis, interstitiis alte et argute costatis ac (oculo fortissime armato) minutissime et vix perspicue seriatim setulosis, ad apicem ipsum truncatis; antennis pedibusque brevibus, robustis, rufescentioribus, capitulo sat magno,

pallidiore, tarsi parvis, brevibus. Subtus profunde et grosse punctata.

Long. corp. lin. circa  $1\frac{1}{2}$ .

*Capta* ad Nagasaki in ins. Kushiu, necnon inter arbores antiquas ad Hiogo in ins. Nipon.

I have already so fully pointed out the structural peculiarities of this insect that I need scarcely do more than call attention to its very coarsely sculptured surface, the elytral interstices being likewise raised into conspicuous ridges or costæ. There are thirteen examples of it now before me, amongst Mr. Lewis's Coleoptera, a portion of which have the label appended to them of "Nagasaki;" and others were taken "in deciduous trees near the watercourse at Hiogo, in the island of Nipon."

#### Genus 7. EXODEMA (nov. gen.).

*Corpus et structura generalis* fere ut in *Coprodema*, sed *illud* paulo majus ac paulo magis parallelum (i. e. minus fusiforme), *rostro* paululum crassiore, *oculis* vix majoribus, *antennis* sensim longioribus, *capitulo* submajore, necnon mox ante medium (nec omnino in medio) rostri insertis, *elytris* integris (nec ad apicem subtruncatis), *metasterno* sublongiore, *pedibusque* conspicue longioribus, — *femoribus* sensim minus clavatis, et *tarsis* (multo longioribus) haud filiformibus, art.° 3<sup>to</sup> evidenter latiore ac bilobo.

Ab  $\epsilon\xi\omega$ , extra, et  $\delta\acute{\epsilon}\mu\alpha\varsigma$ , corpus.

In its general outline, and opaque, densely sculptured surface (which is more or less sparingly besmeared with dirty, whitish scales (or, as it were, a kind of mud-like deposit), the unique insect from which the above characters have been taken so closely resembles *Coprodema* that it might well be regarded, at first sight, as another member of that group; yet when accurately inspected it differs so essentially in the structure of its feet, which are not only much longer but have their third joint (instead of small and simple) appreciably widened and bilobed, that I cannot but treat it as the type of a nearly-allied but probably distinct genus. As regards its less important particulars, its antennæ are a trifle more elongate, and not quite so medially inserted, being implanted just perceptibly before the middle of its (rather thicker) rostrum, its eyes are a little more developed, its elytra are not at all truncated at their apex, and its metasternum and legs

(especially the latter) are appreciably longer. Its femora also (at any rate the anterior pair) are, proportionately, not quite so clavate.

7. *Exodema sublutosa*, n. sp.

E. parallelo-subfusiformis, piceo-nigra, opaca, parce inæqualiter subcinereo-squamoso-lutosa; capite prothoraceque profunde, rugose et confertim punctatis (punctis in hoc grossis), oculis subprominulis; prothorace mox pone apicem transversim constricto; clytris profunde, confertim et grosse punctato-sulcatis, interstitiis dense transversim rugulosis, costatis, ac (oculo fortissime armato) minutissime et vix perspicue seriatim setulosis; antennis pedibusque rufescentioribus, capitulo magno, pallidiore, tarsis longiusculis. Subtus profunde et grosse punctata.

Long. corp. lin.  $1\frac{2}{3}$ .

*Capta* cum specie præcedenti ad Hiogo in ins. Nipon, hactenus unica.

Apart from the characters above enumerated, the present insect differs from the *Coprodema calandraciformis* (which *primâ facie* it very closely resembles) in being a trifle larger and more parallel, and in its clytral interstices being less sharply costate and more transversely-rugulose. The single example from which the diagnosis has been compiled is also a little more piceous in hue, and not quite so densely besmeared with mud-like scales; but this may be merely accidental. It was mixed-up with Mr. Lewis's specimens of the *Coprodema calandraciformis* (captured at Hiogo, in the island of Nipon), and from which indeed I did not at first sight distinguish it.

Genus 8. PHLÆOPHAGOSOMA (nov. gen.).

*Corpus* angustulum, elongatum, plus minus lineari-fusiforme, calvum, profunde sculpturatum: *rostro* elongato, angustulo, tereti, arcuato; *scrobe* profundâ, curvatâ, infra oculum desiliente; *oculis* longe ante marginem prothoracis sitis, plus minus demissis: *prothorace* elongato-ovato, antice et postice truncato, fere integro (i.e. pone apicem vix constricto); *scutello* rotundato, valde distincto: *metasterno* elongato: *elytris* elongatis, nunc ovato-subcylindricis, nunc subcylindricis. *Antennæ* elongatæ, in medio rostri insertæ; *scapo* subrecto, leviter clavato; *funiculo* 7-articulato, art.<sup>o</sup> 1<sup>mo</sup> subquadrato-obconico (reliquis majore, sed vix magno), sequentibus

latitudine paulo crescentibus; *capitulo* sat magno, ovali, distincte annulato. *Pedes* validi, *antici* ad basin fere approximated, *intermedii* distantiores, *postici* valde distantes: *femoribus* muticis: *tibiis* ad apicem externum in uncum magnum productis: *tarsis* brevibus, art.<sup>is</sup> 1<sup>mo</sup>, 2<sup>do</sup> 3<sup>tio</sup>que longitudine subæqualibus (nec 1<sup>mo</sup> elongato), 3<sup>tio</sup> fere simplicis (i.e. vix dilatato, vix bilobo), ult.<sup>mo</sup> *unguiculis* minutissimis armato.

*Obs.*—Genus *Phlæophago* et *Rhyncolo* affinitate proximum, sed corpore angustiore, magis fusiformi, minus convexo, prothorace magis elongato, rostro longiore graciliore, tarsisque sensim brevioribus (art.<sup>is</sup> 1<sup>mo</sup>, 2<sup>do</sup> et 3<sup>tio</sup> longitudine subæqualibus, nec 1<sup>mo</sup> elongato) facile distinguitur.

Α *Phlæophagus*, et *σῶμα*, corpus.  
(Typus.—*P. minutum*.)

The two insects from which the above structural diagnosis has been compiled are so dissimilar in size, and are so distinct in several points of their structure (albeit not very important ones), that I cannot feel entirely satisfied that they should be looked upon as members of the same actual group; yet, being unwilling to multiply genera unnecessarily, and thinking it far from improbable that species of intermediate stature will ultimately be brought to light, I prefer to treat them as congeneric,—premising only that I would desire to regard the *P. minutum* as the type.

In their *primâ facie* aspect these two insects have more perhaps in common with the European *Phlæophagi* and *Rhyncoli* than any other of the species which were obtained by Mr. Lewis in Japan; and yet from both of those (nearly allied, and not very satisfactorily separated) forms they are, I think, manifestly distinct,—differing in being not only narrower and more fusiform and less convex, but likewise in their prothorax and rostrum being proportionately more elongate, whilst their tarsi are appreciably shorter, the first joint being (instead of produced) subequal in length with the second and third.

Although, however, the antennæ of both of the species described below are inserted medially, there is a slight disparity in the structure of those organs, as well as in that of their tibiæ,—the second funiculus-joint being no longer than the following ones in the *P. minutum*, and

the tibiæ being armed at their inner apex with an evident minute spinule; whilst in the *P. cuvirostre* the tibiæ have their inner angle almost simple, and the second articulation of the funiculus appreciably a little elongated and obconic. Moreover in the first of the species the body is very minute and fusiform, whereas that of the second is comparatively large, and more depressed and parallel. Yet these discrepancies are very likely, after all, no more than specific ones.

a. *Corpus minutum; scutello distincto; antennis gracilibus, funiculi art.º 2º sequentibus non longiore; tibiis ad apicem internum in spinulam parvam productis.*

8. *Phlæophagosoma minutum*, n. sp.

*P. elongatum*, ovato-fusifforme, gracile, angustulum, subnitidum, piceum; rostro elongato, angustulo, tereti, subcurvato, versus apicem rufescentiore, magis polito ac minute parceque punctulato, oculis demissis; prothorace elongato-ovato, antice posticeque truncato, convexo, sat grosse sed leviter punctato; elytris elongate subcylindrico-ovatis basi truncatis, profunde et confertim sulcato-punctatis (aut forsan crenatis), interstitiis costato-elevatis et subrugulosis, ante apicem conspicue constrictis; antennis pedibusque clare rufo-piceis (aut fere piceo-ferrugineis), illarum capitulo pallidiore. Subtus subparce punctatum, punctis vix profundis.

Long. corp. lin. circa  $1\frac{1}{4}$ .

*Captum* ad radices graminis, per oram arenosam maritimam; ad Simabara, in ins. Kushiû.

Apart from its characters of comparatively minute size, narrow, fusiform outline, rather elongate rostrum, and deeply sculptured, convex upper surface, the present interesting little Cossonid may be further known by its piceous hue and brightly rufescent limbs, as well as by its (elongate-ovate) prothorax being almost unconstricted behind the apex, and by its eyes being hardly at all prominent. It is the smallest member of the family which was brought by Mr. Lewis from Japan. Six examples of it are now before me, which Mr. Lewis states were captured by a native collector, at the roots of a wild grass, on the sandy coast of Simabara, in the island of Kushiû.

b. *Corpus majus; scutello valde distincto; antennis robustis, funiculi art.º 2ºo sequentibus distincte paulo longiore; tibiis ad apicem internum fere simplicibus.*

9. *Phlæophagosoma curvirostre*, n. sp.

*P. elongatum*, parallelo-fusifforme, subnitidum, nigrum; rostro elongato, tereti, convexo, curvato, antice gradatim paulo angustiore, magis polito ac minute parceque punctulato, oculis minus demissis (sed vix prominentibus); prothorace elongato-ovato, antice posticeque truncato, subdepresso, grosse et valde profunde punctato; elytris subparallelis, postice gradatim subattenuatis, depressis, valde profunde et grosse sulcato-punctatis, interstitiis costato-elevatis et minutissime (vix perspicue) subseriatim punctulatis; antennis tarsisque piceis, illarum capitulo magno, pallidiore. Subtus profunde punctatum (punctis in medio metasterni obsoletis).

Long. corp. lin. 2.

*Captum* ad Hiogo, in ins. Nipon, hactenus unicum.

As already implied, I do not feel absolutely certain that this insect is congeneric with the preceding one; yet, judging from the single example from which the diagnosis has been drawn out, I scarcely think that its points of discrepancy are of sufficient importance to indicate generic separation,—for in their antennæ being inserted medially, as well as in their rostra being *comparatively* long and slender, their scutella conspicuous, and their feet short and subfiliform (the first joint of which is *not* elongated), they are *inter se* on much the same type. Yet the present species is *primâ facie* exceedingly different from the *P. minutum*,—being not only *very* much larger, darker, less narrowed, more parallel, more deeply sculptured and more depressed, but likewise with its scutellum larger, and its antennæ more robust, the second funiculus-joint of which is (although short) appreciably longer and more obconical than those which follow it. Its elytra also, instead of being elongate-ovate (or a little widened behind the middle), are more decidedly parallel, or, if anything, perhaps a trifle *narrowed* (gradually) behind; and its tibiæ do not appear to be armed with a little spinule at their inner apex. In addition to which its rostrum is somewhat thicker (especially towards the base), as well as convexer and more arcuate; and its eyes are less depressed.

Judging from an appended label, the single example from which the above description has been drawn out appears to have been captured by Mr. Lewis at Hiogo, in the island of Nipon.

Genus 9. PSEUDOCOSSONUS (nov. gen.).

*Corpus* angustum, elongatum, plus minus fusiformi-cylindricum, calvum, minus profunde (saltem antice et subtus) sculpturatum: *rostro* parum elongato, robusto, tereti; *scrobe* profundâ, curvatâ, infra oculum desiliente; *oculis* longe ante marginem prothoracis sitis, rotundatis, prominulis: *prothorace* magno, elongato-ovato, antice et postice truncato, ad latera rotundato-ampliato, mox pone apicem leviter constricto: *scutello* rotundato, valde distincto: *metasterno* elongato: *elytris* subcylindrico-parallelis. *Antennæ* aut longiusculæ, aut breviusculæ, vix pone medium rostri insertæ, crassæ; *scapo* subflexuoso, gradatim valde clavato; *funiculo* 7-articulato, crasso, art.º 1<sup>mo</sup> subquadrato, sequentibus brevibus, latitudine paulo crescentibus, inter se sat arcte applicatis; *capitulo* parvo, ovali, minus abrupto, distincte annulato. *Pedes* validissimi, crassi, breves, *antici* ad basin fere approximati, *intermedii* distantiores, *postici* valde distantes: *femoribus* muticis: *tibiis* latis, ad apicem externum in unicum magnum inflexum, necnon ad internum in spinam robustam distinctam productis, *anticis* versus apicem internum intus distinctius pilosis: *tarsis* brevissimis, crassis, art.º 1<sup>mo</sup>, 2<sup>do</sup> 3<sup>tio</sup>que longitudine subæqualibus (nec 1<sup>mo</sup> elongato), 3<sup>tio</sup> leviter dilatato et distincte bilobo, ult.º brevissimo (tertio vix longiore), conico, *unguiculis* minutissimis armato.

*Obs.*—Genus præcipue insignium pedibus valde robustis (sed brevibus), crassis, tibiis ad apicem conspicue armatis, tarsis brevissimis crassis, art.º ult.º brevissimo conico, necnon unguiculis minutissimis munito. Aliter conspicuum est prothorace magno, in medio rotundate ampliato (sed ibidem vix elytris latiore), minus profunde sculpturatum, antennis (vix pone medium rostri insertis) incrassatis, funiculo crasso, articulis inter se subarcte adpressis, capitulo parvo atque minus abrupto, scutello valde distincto, necnon corpore elongato, fere parallelo, depressiusculo, nitido, *Cossoni* formam aliquo modo simulante.

A ψευδῆς, falsus, et *Cossonus*.

The present genus, the two representatives of which,

described below, have much the *primâ facie* appearance of small *Cossoni*, is well characterized by its extremely robust legs and abnormally short and incrassated feet, the apical joint of which is unusually abbreviated and (instead of being clavate) conical.\* Its claws are excessively minute; and its antennæ, which are a good deal thickened, are implanted immediately behind the middle of the rostrum. In other respects it is remarkable for its broad funiculus-joints, which are closely compacted together (the second, moreover, not being at all longer than those which follow it), and for its rather small and but very slightly widened capitulum, as well as for its greatly developed prothorax, distinct scutellum, elongate, parallel outline, and the comparative robustness of the hook and spine at apex of its tibiæ,—the front pair of which, moreover, are densely fulvo-pubescent towards their inner extremity.

a. *Rostrum elongatum, antennis longiusculis: tibiæ spinæ apicalis interna valde distincta.*

10. *Pseudocossonus brevitarsis*, n. sp.

*P. linearis*, nitidus, niger, depressiusculus; capite prothoraceque parce et minute punctulatis (punctulis in medio rostri elongati evanescentibus), hoc magno, rotundato-ovato, ad latera in medio valde rotundato-ampliato; elytris elongatis, parallelis, subdepressis, parum profunde punctato-striatis, interstitiis latis convexis et parissime minutissimeque (sub lente) punctulatis; antennis tarsisque crassis, robustis, piceis, illis (scapo excepto) tibiisque anticis versus apicem internum griseo-pubescentibus, capitulo parvo pallidiore. Subtus fere haud sculpturatus (tantum punctulis minutis obsoletis, tamen versus utrumque latus distinctioribus, adpersus).

Long. corp. lin. vix 3.

*Captus* prope Yokohama, adhuc unicus.

Both of the *Pseudocossoni* here described agree in their parallel outline and dark, shining surface, as well as in the fact of their head and prothorax being more finely and sparingly punctulated than in any of the other members of the family with which we are concerned; but the present

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\* Judging from the analogy of the genus *Heterarthrus*, it is not impossible that the conical structure of the last joint of the feet may prove to be a sexual character; but until further material, of the two species now under consideration, has been obtained, this point cannot be settled.

species is considerably larger, and a trifle less depressed, than the *P. brachypus*, and its rostrum and antennæ are longer. The former is likewise a little narrower (relatively) and more arcuate, its prothorax is more rounded-outwards in the middle, its elytra are unmargined at their extreme base, and the hook and spine at the apex of its tibiæ are somewhat more powerfully developed. The unique example from which the diagnosis has been compiled appears to have been captured by Mr. Lewis near Yokohama.

b. *Rostrum breviusculum, antennis brevibus: tibiarum spina apicalis minus elongata.*

11. *Pseudocossonus brachypus*, n. sp.

*P.* precedenti minor et paulo depressior, rostro antennisque brevioribus (illo sensim latioribus), prothorace magis triangulari-ovato (i. e. pone medium, nec in medio, rotundate ampliato), elytris paulo brevioribus, ad humeros obsolete subrufescentibus, necnon ad basin ipsam prope scutellum evidenter marginatis, tibiis ad apicem internum minus elongate spinosis.

Long. corp. lin. 2.

*Captus*, semel tantum, ad Tomatzu, prope Nagasaki, in ins. Kushiu.

As already implied, the present *Pseudocossonus* is a little smaller and more depressed than the preceding one, and its rostrum and antennæ are shorter. The former, too, would seem to be a trifle broader, relatively, and less convex.

The prothorax, moreover, of the *P. brachypus* is more triangular (its widest point being *behind*, instead of at the middle): its elytra are distinctly margined at their extreme base (particularly on either side of the scutellum), with their humeral angles appreciably subrufescent; and the spinule at the inner apex of its tibiæ is not quite so powerfully developed. Like the *P. brevitarsis* it is unique, the single example having been taken by Mr. Lewis, at Tomatzu, near Nagasaki, in the island of Kushiu.

Genus 10. HETERARTHUS (nov. gen.).

*Corpus* angustum, cylindrico-fusifforme, calvum, minus profunde sed supra dense sculpturatum, lætius in elytris coloratum (nec omnino nigrum): *rostro* breviusculo, ro-

busto, parallelo, apice recte truncato et interdum paulatim etiam sublatiore; *scrobe* antice brevi latâ profundâ auriculiformi, dein subito angulatim deflexâ et usque ad marginem oculi inferiorem currente; *oculis* longe ante marginem prothoracis sitis, rotundatis, prominulis: *prothorace* elongato-ovato, antice et postice truncato, mox pone apicem constricto: *scutello* subrotundato, distincto: *metasterno* elongato: *elytris* fusiformi-cylindricis, basi truncatis et ibidem anguste marginatis. *Antennæ* longiusculæ, aut mox ante medium aut in medio rostri insertæ; *scapo* gradatim clavato; *funiculo* 7-articulato, art.<sup>o</sup> 1<sup>mo</sup> subquadrato, vix incrassato, sequentibus brevibus, latitudine paulo crescentibus; *capitulo* magno, ovali, abrupto, distincte annulato. *Pedes* longiusculi, minus robusti: *femoribus* muticis, basi gracilioribus: *tibiis* ad apicem externum in uncum inflexum, necnon ad internum in spinam (in *anticis* distinctam, sed in *posticis* ægre observandam) productis, *posterioribus* subflexuosis, versus basin gracilioribus: *tarsis* elongatis, art.<sup>is</sup> 1<sup>mo</sup>, 2<sup>do</sup> 3<sup>tio</sup>que longitudine subæqualibus (nec 1<sup>mo</sup> elongato), 3<sup>tio</sup> leviter dilatato et distincte bilobo, ult.<sup>mo</sup> longiusculo, in *maribus* clavato sed in *fæminis* (superne observando) fusiformi-conico (i. e. versus basin, nec versus apicem, subclavato), *unguiculis* sat magnis armato.

*Obs.*—Genus conspicuum colore elytrorum plus minus pallidiore, corpore angustulo cylindrico-fusiformi, antice confertim punctulato, rostro breviusculo crasso parallelo, ad apicem recte truncato, pedibus longiusculis subgracilibus, tibiis posterioribus subflexuosis, tarsisque elongatis, articulo ultimo secundum sexum diverso.

Α ἕτερος, diversus, et ἄρθρον, articulus.

The narrowish, elongate-fusiform outline, and the rather short and thick (though parallel, and apically truncated) rostrum of the insects which compose the present genus, added to their slenderer and less abbreviated legs and their comparatively lengthened feet (the terminal articulation of which differs in shape, apparently, according to the sex), will serve to distinguish it from the allied groups. Indeed, the sexual peculiarity of the apical tarsal joint is very curious, and one which I do not remember to have observed in any other Rhynchophorous form,—it being ordinary and clavate in the males, but conical (or, rather, fusiform-conical) in the females, the widest part being

towards the base instead of towards the apex.\* And *Heterarthrus* is further remarkable for the punctation of its head and prothorax being dense but at the same time fine, and for its elytra being more or less of a pallid hue (sometimes ornamented with a black patch),—an arrangement of colour which gives the insects a totally different aspect from any of the other *Cossonidæ* with which we have here to do. As regards the antennæ, they are inserted either in the middle or just before the middle of the rostrum; and the four posterior tibiæ are subflexuose and slender (particularly at their base), and less evidently armed at their inner apex. Their second funiculus-joint is (like the succeeding ones) short, and their club is large and abrupt.

a. *Antennæ mox ante medium rostri (paulo longioris) insertæ. Pedes elongati.*

12. *Heterarthrus Lewisii*, n. sp.

H. elongato-fusiformis, subnitidus, convexiusculus; capite prothoraceque vel nigris vel brunneo-nigris, dense sed argute punctulatis, hoc elongato-ovato, elytris vix angustiore; elytris fusiformi-cylindricis, basi anguste marginatis, rufo-ferrugineis (interdum nigro-pictis), striato-punctatis (striis versus suturam profundioribus), interstitiis latis depressis subrugulosis et parcissime minutissimeque (sub lente) punctulatis; antennis tarsisque plus minus piceo-ferrugineis, femoribus tibiisque plus minus piceis. Subtus leviter punctatus (punctis in abdomine fere obsoletis).

*Variat* elytris plagâ magnâ suffusâ post mediâ (antice per suturam versus scutellum angustius currente) nigrescenti-ornatis.

Long. corp. lin.  $2\frac{1}{2}$ .

*Captus* prope Nagasaki, in ins. Kushiu.

Species valde distincta, ornata, et in honorem cl. G. Lewis, insularum Japonicarum scrutatoris oculatissimi indefessi, citata.

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\* This character, although real, is not a very easy one to observe,—inasmuch as when viewed laterally the joint seems to be equally clavate, and similar, in both sexes; and it is only when inspected carefully from above, and beneath a high magnifying power, that the conical outline, in that of the females, becomes evident. And I may add that, since writing the above, I have remarked the same peculiarity of tarsal articulation in a Cossonid from Ceylon, which has been communicated to me by Mr. Janson, and which indeed I have every reason to suspect (without further examination) is a true *Heterarthrus*.

Being precisely similar in colour and sculpture, I should certainly have regarded this *Heterarthrus* as the other sex of the following one had not the more numerous examples of the latter revealed the fact that both males and females (as proved by the construction of their tarsi) are undoubtedly present. Hence I have no choice but to treat the two female individuals from which the above diagnosis has been drawn out as specifically distinct from the *H. pallidipennis*. Regarding this conclusion, therefore, as almost unavoidable, I may add that the *H. Lewisii* is not only larger than its ally, and with appreciably longer legs and antennæ, but that its rostrum likewise is a little more lengthened (with the antennæ implanted just *before*, instead of *at*, the middle point), and its third tarsal joint is just perceptibly more expanded and bilobed. It was taken by Mr. Lewis near Nagasaki, in the island of Kushiu, by beating old hedges.

b. *Antennæ in medio rostri (paulo brevioris) insertæ.*  
*Pedes paulo breviores.*

13. *Heterarthrus pallidipennis*, n. sp.

H. formâ, sculpturâ coloreque ut in specie præcedenti; sed corpus paulo minus, rostro, antennis pedibusque sensim brevioribus, antennis in medio (nec mox ante medium) rostri insertis.

. Long. corp. lin. circa 2.

*Captus* prope Nagasaki, in ins. Kushiu; cum specie præcedenti degens.

I have already implied that the present *Heterarthrus* is so like the preceding one that I should have taken it for a mere sexual form of the latter, had I not found a structural difference in the tarsi of the few examples now before me, which would seem to imply that both males and females are undoubtedly indicated; and I am therefore constrained to look upon the *H. pallidipennis* as specifically distinct from the *H. Lewisii*. The former may consequently be defined as being merely a little smaller than its ally, and in having its legs, rostrum, and antennæ appreciably shorter,—the latter, moreover, being implanted more strictly *medially* than *ante-medially*. Mr. Lewis appears to have captured his specimens, along with those of the last species, out of old hedges, near Nagasaki, in the island of Kushiu.

## Genus 11. MACRORHYNCOLUS (nov. gen.).

*Corpus* fusiformi-cylindricum, angustum, subdepressum, calvum, nitidum, profunde sculpturatum: *rostro* brevi, crasso, lineari, arcuato; *scrobe* antice latâ profundâ brevi auriculiformi, dein subito angulatim deflexâ et usque ad marginem oculi inferiorem currente; *oculis* sat magnis, rotundatis, paulo prominentibus et longe ante marginem prothoracis sitis: *prothorace* elongato-ovato, antice et postice truncato: *scutello* rotundato, valde distincto: *metasterno* elongato: *elytris* parallelis, postice vix attenuatis. *Antennæ* crassæ, pone medium rostri insertæ; *scapo* curvato, gradatim valde clavato; *funiculo* 7-articulato, art.<sup>o</sup> 1<sup>mo</sup> reliquis paulo majore, sequentibus subæqualibus, latitudine vix crescentibus, inter se argute divisis sed haud laxis; *capitulo* ovato, apicem versus conspicue 3-annulato. *Pedes* breves, validi, crassi, *antici* ad basin parum approximati, *intermedii* distantiores, *postici* valde distantes: *femoribus* muticis: *tibiis* ad apicem externum in uncum acutum, necnon ad internum in spinam minorem productis: *tarsis* breviusculis, crassiusculis, art.<sup>is</sup> 1<sup>mo</sup>, 2<sup>do</sup> 3<sup>tio</sup>que longitudine subæqualibus (nec 1<sup>mo</sup> elongato), 3<sup>tio</sup> fere simplici (i. e. vix dilatato, vix bilobo), ult.<sup>mo</sup> *unguiculis* parvis armato.

*Obs.*—*Rhyncolo* affinitate proximum, sed differt corpore majore, longiore, ac magis cylindrico, rostro (licet brevi, crasso) conspicue parallelo, nec triangulari, scrobe aliter formatâ, oculis majoribus ac magis prominentibus, antennis pone (nec ante) medium rostri insertis, prothorace longiore, tibiisque (præsertim anticis) ad angulum internum in spinam majorem productis. A *Cossono* differt corpore minore, angustiore, magis fusiformi, rostro breviori latiore ac magis parallelo, oculis omnino rotundatis, antennis pedibusque plus minus brevioribus crassioribus, funiculi articulo secundo nullo modo sequentibus longiore, tarsorumque articulo primo minus evidenter elongato, et tertio sensim latiore ac magis cordato.

A *μακρὸς*, longus, et *Rhyncolus*.

The four individuals from which the above structural diagnosis has been drawn out might seem at first sight to represent an unusually large and elongate species of *Rhyncolus*; but a more critical examination will show that they cannot be associated with that group. Not to

mention their larger size, more parallel outline, and more elongate prothorax, they differ considerably in the formation of their rostrum, which is neither thick and triangular like that of the typical *Rhyncoli*, nor comparatively slender and linear as in the normal members of *Phlæophagus*, but somewhat intermediate between the two,—being short and incrassated, but nevertheless *conspicuously parallel throughout* (though not quite so short and broad, nor so depressed, as in *Xenomimetes*). Its scrobs, too, is very differently constructed from that of *Rhyncolus*,—being short, deep, wide, and auriculiform at its base, and then suddenly narrowed and bent downwards, at a sharp angle, beneath the eye. In addition to this, its eyes are larger and more prominent than those of the *Rhyncoli* (and the *Phlæophagi*), its antennæ are implanted behind (instead of before) the middle of the rostrum, and its tibiæ are produced at their inner angle into a more distinct spinule. In its thickened antennæ and limbs, and short feet, it is more, perhaps, on the *Rhyncolus* than the normal *Phlæophagus* type.

14. *Macrorhyncolus crassiusculus*, n. sp.

*M. angusto-linearis*, parallelus, subdepressus, calvus, niger, nitidus; capite argute punctulato rostroque arcuatis convexis, oculis prominentibus; prothorace elongato-ovato, antice et postice truncato, mox pone apicem transversim constricto, profundius punctato, in medio obsolete carinato; elytris profunde arguteque striato-punctatis, interstitiis convexis et minutissime (vix perspicue) uniseriatim punctulatis; antennis pedibusque brevibus crassiusculis, rufo-piceis, illarum capitulo ferrugineo. Subtus sat dense profundeque punctatus.

Long. corp. lin.  $1\frac{3}{4}$ — $2\frac{1}{4}$ .

*Captus* inter fungos pinosque ad Hiogo, in ins. Nipon, mense Augusto, A.D. 1870.

The black hue and shining (though nevertheless deeply sculptured) surface of this beautiful Cossonid, added to its structural features to which I have above alluded, will suffice to distinguish it from everything else with which we are here concerned. The four examples from which the description has been drawn were taken amongst fir-trees and funguses, by Mr. Lewis, at Hiogo, in the island of Nipon.

## Genus 12. XENOMIMETES (nov. gen.).

*Corpus* cylindricum, calvum, dense et profunde sculpturatum: *capite* convexo; *rostro* brevi, lato, sed capite sensim angustiore, et parallelo (nec triangulari), depresso; *scrobe* brevi, profundâ, curvatâ, infra oculum desiliente; *oculis* longe ante marginem prothoracis sitis, rotundatis, valde prominentibus: *prothorace* subcylindrico, pone marginem anticum transversim constricto: *scutello* rotundato, distincto: *metasterno* elongato: *elytris* cylindricis, ad apicem ipsum paulo singulatim divaricatis. *Antennæ* breviusculæ, crassiusculæ, in medio (aut forsitan mox ante medium) rostri insertæ; *scapo* recto, leviter clavato; *funiculo* 7-articulato, art.<sup>o</sup> 1<sup>mo</sup> subquadrato (reliquis majore, sed haud magno), sequentibus transversis, latitudine paulo crescentibus; *capitulo* abrupto, ovato, apice obscure annulato. *Pedes* validi, *antici* ad basin fere approximati, *intermedii* distantiores, *postici* valde distantes: *femoribus* muticis: *tibiis* subflexuosis (extus quasi paululum excavatis), ad apicem externum in unicum magnum inflexum, necnon ad internum in spinam parvam productis: *tarsis* elongatis, gracilibus, art.<sup>o</sup> 1<sup>mo</sup> longiusculo, 3<sup>tio</sup> fere simplici (i. e. vix dilatato et vix bilobo), ult.<sup>mo</sup> elongato, gracijsculo, *unguiculis* parvis armato.

*Obs.*—*Corpus Hylurgi* formam simulans, sed rostro, tibiis abdomineque *Cossonidis* omnino congruit. A *Syntomocero* (= *Eremotes*, olim) ac *Stenoscelide* differt, inter alia, rostro (quamvis brevi) conspicue longiore, minus incrassato, et lineari (nec triangulari), antennis aliter constructis, elytrisque ad apicem sensim divaricatis.

A ξένος, extraneus, et μιμητής, imitator.

The facies and sculpture of the remarkable Cossonid from which the above structural diagnosis has been compiled have so much in common, at first sight, with certain *sub-Curculionideous* forms (like *Hylastes*) of the *Scolytidæ*, that it must clearly be regarded as the type of another group in the vicinity of *Eremotes* (or *Syntomocerus*), which infests the pine trees at a high elevation in the Canarian archipelago. Yet its rostrum, although short and broad, is neither *so* short nor *so* broad as in that genus, and, moreover (instead of being thick and triangular), it is *parallel* and depressed, and appreciably narrower than the head. Its antennæ, also, are very different from what obtains in that group, being less thickened; and there is not that peculiarity, which forms so marked

a feature in *Eremotes*, as regards the diminished (and almost concealed) second funiculus-joint. Its elytra, moreover, are curiously rounded off separately, and subdivaricate, at their apex,—much after the fashion we see in various Apions of the *vernale* type. Yet, in spite of these discrepancies (especially as concerns the breadth and outline of its rostrum), I feel satisfied that its real affinities are more with the particular genus to which I have just called attention, than with the *Rhyncoili*; though since it cannot be admitted into the section of the family, characterized by *Eremotes* and *Stenoscelis*, in which the rostrum is *excessively* abbreviated, thick, and triangular, I have placed it thus far towards the close of the present division.

15. *Xenomimetes destructor*, n. sp.

X. cylindrica, atra, subnitida; capite dense ruguloso-punctato, rostro depressiusculo, in medio leviter canaliculato, oculis valde prominentibus, fronte convexâ; prothorace cylindrico, grosse punctato (punctis suboblongis ac longitudinaliter subconfluentibus), carinulâ mediâ lævi instructo; elytris transversim rugulosis, profunde crenato-striatis, regione scutellari desiliente, interstitiis rugulosis ac minutissime subseriatim punctulatis, mox ante apicem utrinque plicato-subconstrictis necnon ad apicem ipsum singulatim divaricatis; antennis rufo-piceis, capitulo ferrugineo; pedibus nigro-piceis, tarsis rufescentioribus. Subtus grosse, sed leviter et vix dense, punctata.

Long. corp. lin.  $1\frac{3}{4}$ -2.

*Capta* inter pinos prope Nagasaki, in ins. Kushiû, hinc inde vulgaris.

The deep-black, cylindrical, and coarsely, densely sculptured body of this insect, added to its short and broad, yet parallel, rostrum, and its very prominent eyes, will, in conjunction with the various characters to which I have above alluded, abundantly distinguish it from every other member of the *Cossonidæ* with which we are here concerned. It was captured in considerable abundance by Mr. Lewis, on various occasions, amongst old pine trees near Nagasaki, in the island of Kushiû.

## Genus 13. HEXARTHURUM.

Wollaston, Ann. Nat. Hist. v. 448 (1860).

*Corpus* breviter cylindricum, postice obtuse terminatum, (nisi oculo fortissime armato) calvum, vix nitidiusculum, profunde sculpturatum; *rostro* brevi, angustulo-subtriangulari; *scrobe* fere versus medium oculi ascendente; *oculis* rotundatis sed valde demissis: *prothorace* ovato basi truncato: *scutello* valde distincto: *metasterno* haud valde elongato: *elytris* parallelis, et (oculo fortissime armato) minutissime parcissimeque asperatis. *Antennæ* brevissimæ, glabræ, circa (aut vix pone) medium rostri insertæ; *scapo* brevissimo; *funiculo* 6-articulato, art.º 1<sup>mo</sup> lato (reliquis multo majore), antice recte truncato, sequentibus brevibus, latitudine paulo crescentibus, inter se arcte adpressis; *capitulo* abrupto, compresso, subrotundato, solido. *Pedes* breves, *anteriores* fere contigui, et etiam *postici* haud late distantes: *femoribus* (præsertim *anticis*) incrassatis, muticis: *tibiis* ad apicem externum in uncum acutum minus curvatum productis: *tarsis* longiusculis, gracilibus, filiformibus, art.º 1<sup>mo</sup> longiusculo, 3<sup>tio</sup> simplici (nec dilatato, nec bilobo).

The genus *Hexarthrum* (which, in the size and *facies* of its exponents, has much the *primâ facie* aspect of *Rhyncolus*) is at once remarkable amongst the *Cossonides* for its 6-articulated funiculus, its extremely abbreviated antennæ, and its rather shortly-cylindric outline,—the elytra (which are very minutely and remotely asperated, when viewed beneath a high magnifying power) being obtusely rounded behind. It is also further distinguished by its shortened rostrum and legs, by its first funiculus-joint being wide, and very straightly lopped-off (or truncated) in front, by its club being rounded, compressed, and exceedingly solid, by its four anterior coxæ being very nearly contiguous, by its femora (particularly the front pair) being a good deal thickened, and by its tarsi (the basal joint of which is appreciably elongated, and the third one simple) being slender and filiform. The only species of it which had hitherto been made known occurs at Madeira,—where I have met with it (though very rarely) crawling on the inner walls of houses (where I have little doubt that it fed upon the old planks and rafters), and where the late Mr. Bewicke formerly captured several examples of it amongst decayed, tinder-like

wood in a neglected out-house. I believe, therefore, that its mode of life is very similar to that of *Pentarthrum* and *Mesoxenus*; and if this be the case, I am the less surprised that Mr. Lewis should have detected a second representative of the genus in so distant a region as the Japanese archipelago.

16. *Hexarthrum brevicorne*, n. sp.

H. breviter cylindricum, vix nitidiusculum, piceo-nigrum, et (nisi oculo fortissime armato) calvum; rostro minute et dense punctulato; prothorace ovato basi truncato, dense, valde profunde, et argute punctato; elytris (oculo fortissime armato) minutissime parcissimeque asperatis, grosse sulcato-punctatis (punctis magnis), interstitiis minutissime seriatim punctulatis; antennis (brevissimis) tarsisque piceo-ferrugineis, femoribus tibiisque nigro-piceis. Subtus grosse et profunde punctatum, et (oculo fortissime armato) parce fulvo-sericatum.

Long. corp. lin.  $1\frac{1}{3}$ .

Captus ad Hiogo, in ins. Nipon.

The present *Hexarthrum* very closely resembles the *H. capitulum*, which has been observed hitherto only in Madeira; it is, however (judging from the single example now before me), a little smaller and darker, its rostrum is not quite so thickened, its limbs are (if anything) even more abbreviated still, its elytra (which, when viewed beneath a high magnifying power, are not quite so appreciably asperate) have their striæ deeper and their punctures somewhat larger; and its first and second abdominal segments are not quite so distinctly separated from each other by a sutural line. The unique example from which the diagnosis has been compiled was captured by Mr. Lewis at Hiogo, in the island of Nipon.

\*\* *Rostrum brevissimum, crassum (aut parallelum, aut triangulare)*.

Genus 14. SPHÆROCORYNES (nov. gen.).

*Corpus* subcylindricum, supra fere calvum, subtus breviter pilosum, dense sed haud grosse sculpturatum: *rostrum* brevissimo, crasso, sed tamen parallelo (nec triangulari); *scrobe* antice brevissimâ latâ profundâ auriculiformi, dein subito angulatim deflexâ et mox oblitteratâ; *oculis* longe ante marginem prothoracis sitis, rotundatis, valde promi-

mentibus: *prothorace* cylindrico-ovato, antice et postice truncato, mox pone apicem leviter transversim constricto: *scutello* subrotundato, valde distincto: *metasterno* elongato: *elytris* subcylindricis. *Antennæ* longiusculæ, crassæ, versus apicem rostri insertæ; scapo elongato, curvato, gradatim valde clavato; *funiculo* 7-articulato, brevi, art.º 1<sup>mo</sup> subquadrato, vix incrassato, sequentibus brevissimis, latitudine conspicue crescentibus; *capitulo* maximo, rotundato, abrupto, solido, apicem versus obscure annulato. *Pedes* validi, ad basin subæqualiter distantes (nec *antici* minus et *postici* magis inter se separati): *tibiis* (præsertim *anticis*) robustis, et ad apicem externum in uncum magnum deflexum productis: *tarsis* elongatis, latiusculis, pilosis, art.º 1<sup>mo</sup> elongato. 3<sup>tio</sup> sensim latiore ac profunde bilobo, ult.<sup>mo</sup> clavato, *unguiculis* parvis armato.

*Obs.*—Genus præcipue insignum rostro brevissimo crasso, sed tamen parallelo (nec triangulari), antennis crassis, scapo elongato, funiculo brevi, et capitulo permagno rotundato abrupto, oculis prominentibus, pedibus ad basin subæqualiter separatis (sc. *anticis* magis sed *posticis* minus remotis quam in *Cossonidis* plerisque obtinet), corpore subtus distincte breviter pubescente, tarsisque latiusculis pubescentibus, articulo primo elongato, tertio sensim latiore ac conspicue bilobo.

A σφαῖρα, globus, et κορύνη, clava.

A well-defined genus, which may at once be recognized by the shortness and thickness of its rostrum (which is nevertheless parallel, and not triangular as in *Stenoscelis*), by its thickened antennæ having their scape elongate and very robust, their funiculus short, and their club extremely large, rounded, and abrupt, by its tarsi (the first joint of which is lengthened, and the third bilobed) being rather broad and pubescent, and by the fact of its legs being *subequally* distant at their base,—the anterior pair being less approximated, and the hinder ones more so, than is usually the case in the *Cossonidæ*. And it is further remarkable for its body (which is nearly cylindrical, and with the eyes prominent) being sparingly clothed beneath with a fine and short pile; and for its front tibiæ being somewhat widened, flexuose, and robust, with their apical hook largely developed.

17. *Sphærocorynes Lewisianus*, n. sp.

S. subcylindricus, convexus, supra (nisi oculo fortissime armato) calvus, niger, subopacus; capite prothoraceque

subtilissime alutaceis et dense punctatis, rostro brevissimo, crasso in medio profunde canaliculato, oculis prominentibus, hoc cylindrico-ovato, convexo, in medio obsolete carinato; elytris parallelis, paulo picescentioribus, transversim rugulosis, subpunctato-sulcatis, interstitiis latiusculis convexis (præsertim postice) et argute seriatim punctulatis; antennis tarsisque incrassatis, rufescentioribus, illarum capitulo magno, rotundato, obscuriore, pubescenti; tibiis anticis intus versus apicem fulvo-pubescentibus. Subtus convexus, dense sed leviter punctatus, necnon breviter fulvo-pubescentis.

Long. corp. lin.  $1\frac{2}{3}$ .

*Captus* prope Nagasaki, in ins. Kushiu, Aprili exeunte A.D. 1870, rarissime.

In addition to the characters to which I have just called attention, the present somewhat *Hylastes*-like Cossonid may be further known by its dark hue, and by its opaque and closely, but not very coarsely, sculptured surface (the head and prothorax of which are minutely *alutaceous*, as well as punctured), and by its elytral striæ being deep, but rather lightly punctured, with the interstices broad in front, narrower and more convex behind, transversely rugulose, and branded with a longitudinal row of very distinct punctules,—a type of sculpture with which we are very familiar in certain members of the *Hylesinidæ*. Two examples of it were beaten by Mr. Lewis, “out of brushwood,” near Nagasaki, in the island of Kushiu, on the 22nd of April, 1870.

#### Genus 15. STENOSCELIS.

Wollaston, Journ. of Ent. i. 141 (1861).

*Corpus* ovato-cylindricum, crassiusculum, calvum, grosse sculpturatum, postice etiam asperatum, *Hylastes* aut *Dendroctonus* primâ facie simulans: *capite* subgloboso, crasso; *rostro* brevissimo, subtriangulari, crasso; *scrobe* fere nullo (antennis ad basin in impressione brevi mox ante medium oculi insertis); *oculis* magnis, rotundatis, sed omnino demissis: *prothorace* breviter subcylindrico-ovato, antice et postice truncato, pone apicem transversim constricto: *scutello* minutissimo, punctiformi: *metasterno* haud valde elongato: *elytris* ovato-cylindricis, postice obtuse desilientibus et asperatis: *abdominis* segm.<sup>tis</sup> 1<sup>mo</sup> et

2<sup>do</sup> magis evidenter separatis quam in Cossonidis typicis, necnon inter se subæqualibus. *Antennæ* brevissimæ subgraciles, prope medium rostri brevissimi insertæ; *scapo* brevissimo, clavato; *funiculo* 7-articulato, art.° 1<sup>mo</sup> magno, lato, transverso-quadrato, sequentibus (a 2<sup>do</sup> parvo, brevissimo, transverso) longitudine paulo sed latitudine valde paulatim crescentibus, inter se argute separatis, ult.<sup>mo</sup> ad *capitulum* magnum solidum subglobosum haud arcte applicato. *Pedes* subgraciles, *anteriores* ad basin approximati, *postici* parum (sed haud valde) distantes: *femoribus* muticis: *tibiis* rectis, subgracilibus, ad apicem externum in uncum magnum deflexum elongatum productis: *tarsis* longissimis, gracilibus, art.° 1<sup>mo</sup> elongato, 3<sup>tio</sup> reliquis vix latiore sed evidenter minute bilobo, ult.<sup>mo</sup> elongato, clavato, *unguiculis* magnis armato.

*Obs.*—Formâ generali breviter ovato-cylindricâ, rostro brevissimo crasso subtriangulari, scrobe nullo, elytris postice obtuse desilientibus necnon ibidem etiam asperatis, coxisque anterioribus approximatis genus inter *Cossonidas* anomalum, et *Hylastes*, aut potius *Dendroctonus*, Scolytidarum, primâ facie simulans. Præterea conspicuum est corpore calvo, crasso, rugose sculpturato, oculis magnis sed omnino demissis, antennis brevissimis, scapo præcipue brevissimo, funiculi articulo primo magno, transversim quadrato, reliquis (a 2<sup>do</sup> minutissimo, transverso) gradatim conspicue latioribus, capitulo magno rotundato solido, metasterno haud valde elongato, etiam coxis posticis haud late separatis, pedibus subgracilibus, tarsisque (longissimis) præcipue gracilibus, art.<sup>is</sup> 1<sup>mo</sup> et ult.<sup>mo</sup> elongatis, hoc *unguiculis* magnis munito.

The unique example from which I have drawn the above structural characters is one of the most important and interesting of all the Japanese *Cossonidæ* which were collected by Mr. Lewis, as supplying a second representative of a remarkable group which has hitherto been observed only at St. Helena and the Cape of Good Hope; and it is the nearest true member of the *Rhyncophora* (as yet made known) to the closely-allied Hylastideous forms of the *Scolytidæ*,—its somewhat short, ovate-cylindric outline, and excessively abbreviated, thick, subtriangular rostrum, in conjunction with its obsolete scrobs, its approximated four anterior coxæ, and the fact of its elytra being rather obtusely-shortened, or bent down, behind, where they are besprinkled with tuberculiform asperities,

being strongly suggestive, at first sight, of such groups as *Hylastes* and *Dendroctonus*. In other respects it may be known by its bald, but coarsely sculptured, surface; by its eyes being large, yet entirely sunken or depressed; by its antennæ being excessively short (more particularly as regards the scape, which projects very little beyond the lateral edge of the rostrum), with their first funiculus-joint large and transverse-quadrated, whilst the rest are very abbreviated, though increasing gradually (from the excessively minute basal one) in breadth, and with their club rounded, solid, and abrupt; by its metasternum and first abdominal segment being less elongated than is usual amongst the *Cossonidæ*; by even its *hinder* coxæ being but slightly separated; by its legs being rather slender, with their tibial hooks elongate and powerfully developed; and by its tarsi being likewise much lengthened, but at the same time extremely thin,—with the basal and apical articulations comparatively long, the third one hardly at all expanded, but nevertheless minutely bilobed, and the claws very conspicuous.

18. *Stenoscelis gracilitarsis*, n. sp.

*S.* ovato-cylindricus, convexus, calvus, niger, subnitidus; capite rotundato, crasso, dense punctulato, punctis in rostro (brevissimo, subtriangulari) longitudinaliter subconfluentibus, oculis omnino depressis; prothorace breviter subcylindrico-ovato, pone medium ad latera rotundato-ampliato sed tamen ibidem sinuato, profunde et grosse (sed vix densissime) punctato, paululum malleato-inæquali; elytris ovato-parallelis, vix picescentioribus, profunde et grosse crenato-striatis, interstitiis latis, costato-elevatis et minute seriatim punctulatis, necnon versus apicem (obtusedesilientem) tuberculis parvis parce asperatis, regione scutellari desiliente; antennis tarsisque gracilibus, picescentioribus, illis brevissimis, his elongatis. Subtus grosse punctatus.

Long. corp. lin.  $1\frac{3}{4}$ .

*Captus* (semel tantum) in pino quodam antiquo, Augusto A.D. 1870, ad Hiogo, in ins. Nipon.

Although in its *generic* details unmistakably identical with the *Stenoscelis hylastoides*, from St. Helena and the Cape of Good Hope, the present insect is a little blacker and less picescent than that species, its prothorax is not only more shining but *very* much more deeply and coarsely

(and not so closely) punctured, and the sculpture of its elytra (which have their region immediately surrounding the scutellum depressed into a sort of abbreviated, posteriorly-evanescent channel) is quite different,—their striae (instead of being obsolete) forming deep crenated grooves, with the interstices consequently (although broad) costate and convex; and there is no appearance of the coarse transverse *rugæ* which roughen their anterior half in that insect. The underside moreover is *very* much more grossly punctured, with the first abdominal segment a trifle shorter (it being subequal in length to the second); and its antennæ are even still more abbreviated than those of the *S. hyalastoides* (particularly as regards their scape), with the first funiculus-joint broader and shorter, and the remaining six gradually more widened and transverse, whilst the capitulum is perhaps (if anything) even larger, and more rounded and abrupt.

The unique specimen from which the description has been compiled was taken by Mr. Lewis, during August, 1870, off an old fir-tree at Hiogo, in the island of Nipon.